

SEQUENCE LISTING

<110> PRESIDENT AND FELLOWS OF HARVARD COLLEGE, et al.

<120> METHODS FOR MODULATING AN IMMUNE
RESPONSE BY MODULATING KRC ACTIVITY

<130> HUI-045CP2PC

<150> 10/701,401

<151> 2003-11-03

<160> 8

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 8546

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

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Met Asp Pro

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His Ala Ser Ile Ile Pro Pro Glu Asp Leu Pro Gly Val Pro Lys Val	
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Phe Val Pro Arg Pro Ser Gln Val Ser Leu Lys Pro Thr Glu Glu Ala	
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His Lys Lys Glu Arg Lys Pro Gln Lys Pro Gly Lys Tyr Ile Cys Gln	
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Tyr Cys Ser Arg Pro Cys Ala Lys Pro Ser Val Leu Gln Lys His Ile	
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Cys Ser Leu Ser Gln Ser Ser Thr Ala Gln Ser Leu Glu Asp Pro Pro	
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Val Lys Pro Arg Arg Ser Ser Leu Ser Arg Arg Ser Ser Met Glu Ser	
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Asp Glu Asp Glu Asp Glu Asp Glu Glu Glu Ser Gln Asp Glu Leu Ser	
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Arg Pro Ser Ser Glu Ala Pro Pro Pro Gly Pro Pro His Ala Leu Arg	
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Ala Asp Ser Ser Pro Ile Leu Gly Pro Gln Pro Pro Asp Ala Pro Ala	
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Ser Gly Thr Glu Ala Thr Arg Gly Ser Ser Val Ser Glu Ala Glu Arg	
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Leu Thr Ala Ser Ser Cys Ser Met Ser Ser Gln Ser Met Pro Gly Leu	
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Pro Trp Leu Gly Pro Ala Pro Leu Gly Ser Val Glu Lys Asp Thr Gly	
1940 1945 1950 1955	
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Ser Ala Leu Ser Tyr Lys Pro Val Ser Pro Arg Arg Pro Trp Ser Pro	
1960 1965 1970	

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Ser Lys Glu Ala Gly Ser Arg Pro Pro Leu Ala Arg Lys His Ser Leu	
1975 1980 1985	
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Thr Lys Asn Asp Ser Ser Pro Gln Arg Cys Ser Pro Ala Arg Glu Pro	
1990 1995 2000	
cag gcc tca gcc cca agc cca cct ggc ctg cac gtg gac cca gga agg	6945
Gln Ala Ser Ala Pro Ser Pro Pro Gly Leu His Val Asp Pro Gly Arg	
2005 2010 2015	
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Gly Met Gly Pro Leu Pro Cys Gly Ser Pro Arg Leu Gln Leu Ser Pro	
2020 2025 2030 2035	
ctc acc ctc tgc ccc ctg gga aga gaa ctg gcc cct cga gca cat gtg	7041
Leu Thr Leu Cys Pro Leu Gly Arg Glu Leu Ala Pro Arg Ala His Val	
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Leu Ser Lys Leu Glu Gly Thr Thr Asp Pro Gly Leu Pro Arg Tyr Ser	
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Pro Thr Arg Arg Trp Ser Pro Gly Gln Ala Glu Ser Pro Pro Arg Ser	
2070 2075 2080	
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Ala Pro Pro Gly Lys Trp Ala Leu Ala Gly Pro Gly Ser Pro Ser Ala	
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Gly Glu His Gly Pro Gly Leu Gly Leu Ala Pro Arg Val Leu Phe Pro	
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Pro Ala Pro Leu Pro His Lys Leu Leu Ser Arg Ser Pro Glu Thr Cys	
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Leu Pro Leu His Ser Gln His Leu Thr Arg Ala Pro Cys Pro Leu Ile	
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ccc atc ggt ggg atc cag atg gtg cag gcc cgg cca gga gcc cac ccc	7521
Pro Ile Gly Gly Ile Gln Met Val Gln Ala Arg Pro Gly Ala His Pro	
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Thr Leu Leu Pro Gly Pro Thr Ala Ala Trp Val Ser Gly Phe Ser Gly	
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Gly Gly Ser Asp Leu Thr Gly Ala Arg Glu Ala Gln Glu Arg Gly Arg	
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Trp Ser Pro Thr Glu Ser Ser Ser Ala Ser Val Ser Pro Val Ala Lys	
2245 2250 2255	
gtc tcc aaa ttc aca ctc tcc tca gag ctg gag ggc agg gac tac ccc	7713
Val Ser Lys Phe Thr Leu Ser Ser Glu Leu Glu Gly Arg Asp Tyr Pro	
2260 2265 2270 2275	
aag gag agg gag agg acc ggc gga ggc ccg ggc agg cct cct gac tgg	7761
Lys Glu Arg Glu Arg Thr Gly Gly Gly Pro Gly Arg Pro Pro Asp Trp	
2280 2285 2290	
aca ccc cat ggg acc ggg gca cct gca gag ccc aca ccc acg cac agc	7809
Thr Pro His Gly Thr Gly Ala Pro Ala Glu Pro Thr Pro Thr His Ser	
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Pro Cys Thr Pro Pro Asp Thr Leu Pro Arg Pro Pro Gln Gly Arg Arg	
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Ala Ala Gln Ser Trp Ser Pro Arg Leu Glu Ser Pro Arg Ala Pro Ala	
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aac ccc gag cct tct gcc acc ccg ccg ctg gac cgc agc agc tct gtg	7953
Asn Pro Glu Pro Ser Ala Thr Pro Pro Leu Asp Arg Ser Ser Ser Val	
2340 2345 2350 2355	
ggc tgc ctg gca gag gcc tct gcc cgc ttc cca gcc cgg acg agg aac	8001
Gly Cys Leu Ala Glu Ala Ser Ala Arg Phe Pro Ala Arg Thr Arg Asn	
2360 2365 2370	
ctc tcc ggg gaa tcc agg acc agg cag gac tcc ccc aag ccc tca gga	8049
Leu Ser Gly Glu Ser Arg Thr Arg Gln Asp Ser Pro Lys Pro Ser Gly	
2375 2380 2385	
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Ser Gly Glu Pro Arg Ala His Pro His Gln Pro Glu Asp Arg Val Pro	
2390 2395 2400	
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Pro Asn Ala	
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Ser Ser Val Pro Tyr Pro Gly Ser Gly Thr Ala Pro Thr Gln Glu Ser
          35           40           45
Pro Ala Gln Glu Leu Leu Ala Pro Gln Pro Phe Pro Gly Pro Ser Ser
 50           55           60
Val Leu Arg Glu Gly Ser Gln Glu Lys Thr Gly Gln Gln Gln Lys Pro
65           70           75           80
Pro Lys Arg Pro Pro Ile Glu Ala Ser Val His Ile Ser His Val Pro
          85           90           95
Gln His Pro Leu Thr Pro Ala Phe Met Ser Pro Gly Lys Pro Glu His
          100          105          110
Leu Leu Glu Gly Ser Thr Trp Gln Leu Val Ser Pro Met Arg Leu Gly
          115          120          125
Pro Ser Gly Ser Leu Leu Ala Pro Gly Leu His Pro Gln Ser Gln Leu
          130          135          140
Leu Pro Ser His Ala Ser Ile Ile Pro Pro Glu Asp Leu Pro Gly Val
145          150          155          160
Pro Lys Val Phe Val Pro Arg Pro Ser Gln Val Ser Leu Lys Pro Thr
          165          170          175
Glu Glu Ala His Lys Lys Glu Arg Lys Pro Gln Lys Pro Gly Lys Tyr
          180          185          190
Ile Cys Gln Tyr Cys Ser Arg Pro Cys Ala Lys Pro Ser Val Leu Gln
          195          200          205
Lys His Ile Arg Ser His Thr Gly Glu Arg Pro Tyr Pro Cys Gly Pro
210          215          220
Cys Gly Phe Ser Phe Lys Thr Lys Ser Asn Leu Tyr Lys His Arg Lys
225          230          235          240
Ser His Ala His Arg Ile Lys Ala Gly Leu Ala Ser Gly Met Gly Gly
          245          250          255
Glu Met Tyr Pro His Gly Leu Glu Met Glu Arg Ile Pro Gly Glu Glu
          260          265          270
Phe Glu Glu Pro Thr Glu Gly Glu Ser Thr Asp Ser Glu Glu Glu Thr
          275          280          285
Ser Ala Thr Ser Gly His Pro Ala Glu Leu Ser Pro Arg Pro Lys Gln
290          295          300
Pro Leu Leu Ser Ser Gly Leu Tyr Ser Ser Gly Ser His Ser Ser Ser
305          310          315          320
His Glu Arg Cys Ser Leu Ser Gln Ser Ser Thr Ala Gln Ser Leu Glu
          325          330          335
Asp Pro Pro Pro Phe Val Glu Pro Ser Ser Glu His Pro Leu Ser His
          340          345          350
Lys Pro Glu Asp Thr His Thr Ile Lys Gln Lys Leu Ala Leu Arg Leu
          355          360          365
Ser Glu Arg Lys Lys Val Ile Asp Glu Gln Ala Phe Leu Ser Pro Gly
370          375          380
Ser Lys Gly Ser Thr Glu Ser Gly Tyr Phe Ser Arg Ser Glu Ser Ala
385          390          395          400
Glu Gln Gln Val Ser Pro Pro Asn Thr Asn Ala Lys Ser Tyr Ala Glu
          405          410          415
Ile Ile Phe Gly Lys Cys Gly Arg Ile Gly Gln Arg Thr Ala Met Leu
          420          425          430

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Thr Ala Thr Ser Thr Gln Pro Leu Leu Pro Leu Ser Thr Glu Asp Lys
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 450 455 460
 Ile Thr Lys Leu Ile Thr Ile Asn Glu Ala Val Val Asp Thr Ser Glu
 465 470 475 480
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 Met Glu Ser Pro Lys Ser Ser Leu Tyr Arg Glu Pro Leu Ser Ser His
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 Tyr Ser Phe Asp Asp His Ile Thr Asp Ser Glu Ala Leu Ser Arg Ser
 565 570 575
 Ser His Val Phe Thr Ser His Pro Arg Met Leu Lys Pro Gln Pro Ala
 580 585 590
 Ile Glu Leu Pro Leu Gly Gly Glu Tyr Ser Ser Glu Glu Pro Gly Pro
 595 600 605
 Ser Ser Lys Asp Thr Ala Ser Lys Pro Ser Asp Glu Val Glu Pro Lys
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 Glu Ser Glu Leu Thr Lys Lys Thr Lys Lys Gly Leu Lys Thr Lys Gly
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 Val Ile Tyr Glu Cys Asn Ile Cys Gly Ala Arg Tyr Lys Lys Arg Asp
 645 650 655
 Asn Tyr Glu Ala His Lys Lys Tyr Tyr Cys Ser Glu Leu Gln Ile Ala
 660 665 670
 Lys Pro Ile Ser Ala Gly Thr His Thr Ser Pro Glu Ala Glu Lys Ser
 675 680 685
 Gln Ile Glu His Glu Pro Trp Ser Gln Met Met His Tyr Lys Leu Gly
 690 695 700
 Thr Thr Leu Glu Leu Thr Pro Leu Arg Lys Arg Arg Lys Glu Lys Ser
 705 710 715 720
 Leu Gly Asp Glu Glu Glu Pro Pro Ala Phe Glu Ser Thr Lys Ser Gln
 725 730 735
 Phe Gly Ser Pro Gly Pro Ser Asp Ala Ala Arg Asn Leu Pro Leu Glu
 740 745 750
 Ser Thr Lys Ser Pro Ala Glu Pro Ser Lys Ser Val Pro Ser Leu Glu
 755 760 765
 Gly Pro Thr Gly Phe Gln Pro Arg Thr Pro Lys Pro Gly Ser Gly Ser
 770 775 780
 Glu Ser Gly Lys Glu Arg Arg Thr Thr Ser Lys Glu Ile Ser Val Ile
 785 790 795 800
 Gln His Thr Ser Ser Phe Glu Lys Ser Asp Ser Leu Glu Gln Pro Ser
 805 810 815
 Gly Leu Glu Gly Glu Asp Lys Pro Leu Ala Gln Phe Pro Ser Pro Pro
 820 825 830
 Pro Ala Pro His Gly Arg Ser Ala His Ser Leu Gln Pro Lys Leu Val
 835 840 845
 Arg Gln Pro Asn Ile Gln Val Pro Glu Ile Leu Val Thr Glu Glu Pro
 850 855 860
 Asp Arg Pro Asp Thr Glu Pro Glu Pro Pro Pro Lys Glu Pro Glu Lys
 865 870 875 880
 Thr Glu Glu Phe Gln Trp Pro Gln Arg Ser Gln Thr Leu Ala Gln Leu
 885 890 895
 Pro Ala Glu Lys Ala Pro Pro Lys Lys Lys Arg Leu Arg Leu Ala Glu
 900 905 910

Met Ala Gln Ser Ser Gly Glu Ser Ser Phe Glu Ser Ser Val Pro Leu
 915 920 925
 Ser Arg Ser Pro Ser Gln Glu Ser Asn Val Ser Leu Ser Gly Ser Ser
 930 935 940
 Arg Ser Ala Ser Phe Glu Arg Asp Asp His Gly Lys Ala Glu Ala Pro
 945 950 955 960
 Asp Pro Ser Ser Asp Met Arg Pro Lys Pro Leu Gly Thr His Met Leu
 965 970 975
 Thr Val Pro Ser His His Pro His Ala Arg Glu Met Arg Arg Ser Ala
 980 985 990
 Ser Glu Gln Ser Pro Asn Val Ser His Ser Ala His Met Thr Glu Thr
 995 1000 1005
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 Gln Pro Ser Ser Ser Lys Pro Ser Ala Lys Ser Ser Leu Ser Gln Ile
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 Gln His Glu Pro Gly Gln Ser Pro Glu Phe Phe Ser Thr Gln Ala Met
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 Tyr Ser Ser Asp Ile Arg Leu Pro Pro Val Ala Pro Pro Ala Ser Ser
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 Gln Ser Gln Gly Ser Ser Ala Thr Val Ala Leu Pro Lys Phe Glu Glu
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 Gly Pro Gly Pro Ser Gly Leu Ser Glu Glu Gln Ser Arg Ala Phe Pro
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Thr Pro Tyr Leu Arg Val Pro Val Thr Leu Pro Glu Arg Lys Gly Thr
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 Thr Met Glu Thr Gln Gln Gln Lys Arg Val Lys Glu Glu Glu Ala Ser
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 Lys Ala Asp Glu Lys Leu Glu Leu Val Lys Pro Cys Ser Val Val Leu
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 1475 1480 1485
 Gln Gly Gln Gly Arg Arg Glu Leu Glu Met Leu Ser Ser Leu Ser Ser
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 Ser His Gly Gln Ala Pro Gly Ser Glu Ala Leu Lys Glu Tyr Pro Gln
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 Tyr Val Arg Gly Arg Gly Arg Gly Lys Tyr Val Cys Glu Glu Cys Gly
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 Ser Asp Leu Asp Glu Asp Glu Asp Glu Asp Glu Glu Glu Ser Gln Asp
 1860 1865 1870

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 1875 1880 1885
 Ala Leu Arg Ala Asp Ser Ser Pro Ile Leu Gly Pro Gln Pro Pro Asp
 1890 1895 1900
 Ala Pro Ala Ser Gly Thr Glu Ala Thr Arg Gly Ser Ser Val Ser Glu
 1905 1910 1915 1920
 Ala Glu Arg Leu Thr Ala Ser Ser Cys Ser Met Ser Ser Gln Ser Met
 1925 1930 1935
 Pro Gly Leu Pro Trp Leu Gly Pro Ala Pro Leu Gly Ser Val Glu Lys
 1940 1945 1950
 Asp Thr Gly Ser Ala Leu Ser Tyr Lys Pro Val Ser Pro Arg Arg Pro
 1955 1960 1965
 Trp Ser Pro Ser Lys Glu Ala Gly Ser Arg Pro Pro Leu Ala Arg Lys
 1970 1975 1980
 His Ser Leu Thr Lys Asn Asp Ser Ser Pro Gln Arg Cys Ser Pro Ala
 1985 1990 1995 2000
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 Leu His Asp Phe His Gly His Ile Leu Ala Arg Thr Glu Glu Asn Ile
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 Thr His Ser Pro Cys Thr Pro Pro Asp Thr Leu Pro Arg Pro Pro Gln
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Ser Ser Val Gly Cys Leu Ala Glu Ala Ser Ala Arg Phe Pro Ala Arg
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 35          40          45
Ser Gly Met Gly Gly Glu Met Tyr Pro His Gly Leu Glu Met Glu Arg
 50          55          60
Ile Pro Gly Glu Glu Phe Glu Glu Pro Thr Glu Gly Glu Ser Thr Asp
 65          70          75          80
Ser Glu Glu Glu Thr Ser Ala Thr Ser Gly His Pro Ala Glu Leu Ser
 85          90          95
Pro Arg Pro Lys Gln Pro Leu Leu Ser Ser Gly Leu Tyr Ser Ser Gly
 100          105          110
Ser His Ser Ser Ser His Glu Arg Cys Ser Leu Ser Gln Ser Ser Thr
 115          120          125
Ala Gln Ser Leu Glu Asp Pro Pro Pro Phe Val Glu Pro Ser Ser Glu
 130          135          140
His Pro Leu Ser His Lys Pro Glu Asp Thr His Thr Ile Lys Gln Lys
 145          150          155          160
Leu Ala Leu Arg Leu Ser Glu Arg Lys Lys Val Ile Asp Glu Gln Ala
 165          170          175
Phe Leu Ser Pro Gly Ser Lys Gly Ser Thr Glu Ser Gly Tyr Phe Ser
 180          185          190
Arg Ser Glu Ser Ala Glu Gln Gln Val Ser Pro Pro Asn Thr Asn Ala
 195          200          205
Lys Ser Tyr Ala Glu Ile Ile Phe Gly Lys Cys Gly Arg Ile Gly Gln
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Arg Thr Ala Met Leu Thr Ala Thr Ser Thr Gln Pro Leu Leu Pro Leu
 225          230          235          240
Ser Thr Glu Asp Lys Pro Ser Leu Val Pro Leu Ser Val Pro Arg Thr
 245          250          255
Gln Val Ile Glu His Ile Thr Lys Leu Ile Thr Ile Asn Glu Ala Val
 260          265          270
Val Asp Thr Ser Glu Ile Asp Ser Val Lys Pro Arg Arg Ser Ser Leu
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Ser Arg Arg Ser Ser Met Glu Ser Pro Lys Ser Ser Leu Tyr Arg Glu
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Pro Leu Ser Ser His Ser Glu Lys Thr Lys Pro Glu Gln Ser Leu Leu
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Ser Leu Gln His Pro Pro Ser Thr Ala Pro Pro Val Pro Leu Leu Arg
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Ser His Ser Met Pro Ser Ala Ala Cys Thr Ile Ser Thr Pro His His
 340          345          350
Pro Phe Arg Gly Ser Tyr Ser Phe Asp Asp His Ile Thr Asp Ser Glu
 355          360          365
Ala Leu Ser Arg Ser Ser His Val Phe Thr Ser His Pro Arg Met Leu
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Lys Pro Gln Pro Ala Ile Glu Leu Pro Leu Gly Glu Tyr Ser Ser
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Glu Glu Pro Gly Pro Ser Ser Lys Asp Thr Ala Ser Lys Pro Ser Asp
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Glu Val Glu Pro Lys Glu Ser Glu Leu Thr Lys Lys Thr Lys Lys Gly
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Leu Lys Thr Lys Gly Val Ile Tyr Glu Cys Asn Ile Cys Gly Ala Arg
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Tyr Lys Lys Arg Asp Asn Tyr Glu Ala His Lys Lys Tyr Tyr Cys Ser
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Glu Leu Gln Ile Ala Lys Pro Ile Ser Ala Gly Thr His Thr Ser Pro
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Glu Ala Glu Lys Ser Gln Ile Glu His Glu Pro Trp Ser Gln Met Met
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 His Tyr Lys Leu Gly Thr Thr Leu Glu Leu Thr Pro Leu Arg Lys Arg
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 Arg Lys Glu Lys Ser Leu Gly Asp Glu Glu Glu Pro Pro Ala Phe Glu
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 Ser Thr Lys Ser Gln Phe Gly Ser Pro Gly Pro Ser Asp Ala Ala Arg
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 Asn Leu Pro Leu Glu Ser Thr Lys Ser Pro Ala Glu Pro Ser Lys Ser
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 Val Pro Ser Leu Glu Gly Pro Thr Gly Phe Gln Pro Arg Thr Pro Lys
 565 570 575
 Pro Gly Ser Gly Ser Glu Ser Gly Lys Glu Arg Arg Thr Thr Ser Lys
 580 585 590
 Glu Ile Ser Val Ile Gln His Thr Ser Ser Phe Glu Lys Ser Asp Ser
 595 600 605
 Leu Glu Gln Pro Ser Gly Leu Glu Gly Glu Asp Lys Pro Leu Ala Gln
 610 615 620
 Phe Pro Ser Pro Pro Pro Ala Pro His Gly Arg Ser Ala His Ser Leu
 625 630 635 640
 Gln Pro Lys Leu Val Arg Gln Pro Asn Ile Gln Val Pro Glu Ile Leu
 645 650 655
 Val Thr Glu Glu Pro Asp Arg Pro Asp Thr Glu Pro Glu Pro Pro Pro
 660 665 670
 Lys Glu Pro Glu Lys Thr Glu Glu Phe Gln Trp Pro Gln Arg Ser Gln
 675 680 685
 Thr Leu Ala Gln Leu Pro Ala Glu Lys Ala Pro Pro Lys Lys Lys Arg
 690 695 700
 Leu Arg Leu Ala Glu Met Ala Gln Ser Ser Gly Glu Ser Ser Phe Glu
 705 710 715 720
 Ser Ser Val Pro Leu Ser Arg Ser Pro Ser Gln Glu Ser Asn Val Ser
 725 730 735
 Leu Ser Gly Ser Ser Arg Ser Ala Ser Phe Glu Arg Asp Asp His Gly
 740 745 750
 Lys Ala Glu Ala Pro Asp Pro Ser Ser Asp Met Arg Pro Lys Pro Leu
 755 760 765
 Gly Thr His Met Leu Thr Val Pro Ser His His Pro His Ala Arg Glu
 770 775 780
 Met Arg Arg Ser Ala Ser Glu Gln Ser Pro Asn Val Ser His Ser Ala
 785 790 795 800
 His Met Thr Glu Thr Arg Ser Lys Ser Phe Asp Tyr Gly Ser Leu Ser
 805 810 815
 Leu Thr Gly Pro Ser Ala Pro Ala Pro Val Ala Pro Pro Ala Gly Glu
 820 825 830
 Ala Pro Pro Glu Arg Arg Lys Cys Phe Leu Val Arg Ser Pro Ser Leu
 835 840 845
 Ser Arg Pro Pro
 850

<210> 8

<211> 786

<212> PRT

<213> Homo sapiens

<400> 8

Glu Met Leu Ser Ser Leu Ser Ser Asp Pro Ser Asp Thr Lys Glu Ile
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 Pro Pro Leu Pro His Pro Ala Leu Ser His Gly Gln Ala Pro Gly Ser
 20 25 30

Glu	Ala	Leu	Lys	Glu	Tyr	Pro	Gln	Pro	Ser	Gly	Lys	Pro	His	Arg	Arg		
	35						40					45					
Gly	Leu	Thr	Pro	Leu	Ser	Val	Lys	Lys	Glu	Asp	Ser	Lys	Glu	Gln	Pro		
	50					55					60						
Asp	Leu	Pro	Ser	Leu	Ala	Pro	Pro	Ser	Ser	Leu	Pro	Leu	Ser	Glu	Thr		
65					70					75					80		
Ser	Ser	Arg	Pro	Ala	Lys	Ser	Gln	Glu	Gly	Thr	Asp	Ser	Lys	Lys	Val		
				85					90					95			
Leu	Gln	Phe	Pro	Ser	Leu	His	Thr	Thr	Thr	Asn	Val	Ser	Trp	Cys	Tyr		
		100					105						110				
Leu	Asn	Tyr	Ile	Lys	Pro	Asn	His	Ile	Gln	His	Ala	Asp	Arg	Arg	Ser		
	115					120					125						
Ser	Val	Tyr	Ala	Gly	Trp	Cys	Ile	Ser	Leu	Tyr	Asn	Pro	Asn	Leu	Pro		
	130				135						140						
Gly	Val	Ser	Thr	Lys	Ala	Ala	Leu	Ser	Leu	Leu	Arg	Ser	Lys	Gln	Lys		
145				150						155					160		
Val	Ser	Lys	Glu	Thr	Tyr	Thr	Met	Ala	Thr	Ala	Pro	His	Pro	Glu	Ala		
			165						170					175			
Gly	Arg	Leu	Val	Pro	Ser	Ser	Ser	Arg	Lys	Pro	Arg	Met	Thr	Glu	Val		
	180							185					190				
His	Leu	Pro	Ser	Leu	Val	Ser	Pro	Glu	Gly	Gln	Lys	Asp	Leu	Ala	Arg		
	195					200						205					
Val	Glu	Lys	Glu	Glu	Glu	Arg	Arg	Gly	Glu	Pro	Glu	Glu	Asp	Ala	Pro		
	210					215					220						
Ala	Ser	Gln	Arg	Gly	Glu	Pro	Ala	Arg	Ile	Lys	Ile	Phe	Glu	Gly	Gly		
225				230					235					240			
Tyr	Lys	Ser	Asn	Glu	Glu	Tyr	Val	Tyr	Val	Arg	Gly	Arg	Gly	Arg	Gly		
			245					250					255				
Lys	Tyr	Val	Cys	Glu	Glu	Cys	Gly	Ile	Arg	Cys	Lys	Lys	Pro	Ser	Met		
	260					265							270				
Leu	Lys	Lys	His	Ile	Arg	Thr	His	Thr	Asp	Val	Arg	Pro	Tyr	Val	Cys		
	275					280						285					
Lys	His	Cys	His	Phe	Ala	Phe	Lys	Thr	Lys	Gly	Asn	Leu	Thr	Lys	His		
	290					295				300							
Met	Lys	Ser	Lys	Ala	His	Ser	Lys	Lys	Cys	Gln	Glu	Thr	Gly	Val	Leu		
305				310					315					320			
Glu	Glu	Leu	Glu	Ala	Glu	Glu	Gly	Thr	Ser	Asp	Asp	Leu	Phe	Gln	Asp		
			325					330					335				
Ser	Glu	Gly	Arg	Glu	Gly	Ser	Glu	Ala	Val	Glu	Glu	His	Gln	Phe	Ser		
	340					345							350				
Asp	Leu	Glu	Asp	Ser	Asp	Ser	Asp	Ser	Asp	Leu	Asp	Glu	Asp	Glu	Asp		
	355				360							365					
Glu	Asp	Glu	Glu	Glu	Ser	Gln	Asp	Glu	Leu	Ser	Arg	Pro	Ser	Ser	Glu		
	370				375						380						
Ala	Pro	Pro	Pro	Gly	Pro	Pro	His	Ala	Leu	Arg	Ala	Asp	Ser	Ser	Pro		
385				390					395					400			
Ile	Leu	Gly	Pro	Gln	Pro	Pro	Asp	Ala	Pro	Ala	Ser	Gly	Thr	Glu	Ala		
			405					410					415				
Thr	Arg	Gly	Ser	Ser	Val	Ser	Glu	Ala	Glu	Arg	Leu	Thr	Ala	Ser	Ser		
	420					425							430				
Cys	Ser	Met	Ser	Ser	Gln	Ser	Met	Pro	Gly	Leu	Pro	Trp	Leu	Gly	Pro		
	435				440							445					
Ala	Pro	Leu	Gly	Ser	Val	Glu	Lys	Asp	Thr	Gly	Ser	Ala	Leu	Ser	Tyr		
	450				455						460						
Lys	Pro	Val	Ser	Pro	Arg	Arg	Pro	Trp	Ser	Pro	Ser	Lys	Glu	Ala	Gly		
465				470					475					480			
Ser	Arg	Pro	Pro	Leu	Ala	Arg	Lys	His	Ser	Leu	Thr	Lys	Asn	Asp	Ser		
			485					490					495				
Ser	Pro	Gln	Arg	Cys	Ser	Pro	Ala	Arg	Glu	Pro	Gln	Ala	Ser	Ala	Pro		
		500						505					510				

Ser Pro Pro Gly Leu His Val Asp Pro Gly Arg Gly Met Gly Pro Leu
 515 520 525
 Pro Cys Gly Ser Pro Arg Leu Gln Leu Ser Pro Leu Thr Leu Cys Pro
 530 535 540
 Leu Gly Arg Glu Leu Ala Pro Arg Ala His Val Leu Ser Lys Leu Glu
 545 550 555 560
 Gly Thr Thr Asp Pro Gly Leu Pro Arg Tyr Ser Pro Thr Arg Arg Trp
 565 570 575
 Ser Pro Gly Gln Ala Glu Ser Pro Pro Arg Ser Ala Pro Pro Gly Lys
 580 585 590
 Trp Ala Leu Ala Gly Pro Gly Ser Pro Ser Ala Gly Glu His Gly Pro
 595 600 605
 Gly Leu Gly Leu Ala Pro Arg Val Leu Phe Pro Pro Ala Pro Leu Pro
 610 615 620
 His Lys Leu Leu Ser Arg Ser Pro Glu Thr Cys Ala Ser Pro Trp Gln
 625 630 635 640
 Lys Ala Glu Ser Arg Ser Pro Ser Cys Ser Pro Gly Pro Ala His Pro
 645 650 655
 Leu Ser Ser Arg Pro Phe Ser Ala Leu His Asp Phe His Gly His Ile
 660 665 670
 Leu Ala Arg Thr Glu Glu Asn Ile Phe Ser His Leu Pro Leu His Ser
 675 680 685
 Gln His Leu Thr Arg Ala Pro Cys Pro Leu Ile Pro Ile Gly Gly Ile
 690 695 700
 Gln Met Val Gln Ala Arg Pro Gly Ala His Pro Thr Leu Leu Pro Gly
 705 710 715 720
 Pro Thr Ala Ala Trp Val Ser Gly Phe Ser Gly Gly Gly Ser Asp Leu
 725 730 735
 Thr Gly Ala Arg Glu Ala Gln Glu Arg Gly Arg Trp Ser Pro Thr Glu
 740 745 750
 Ser Ser Ser Ala Ser Val Ser Pro Val Ala Lys Val Ser Lys Phe Thr
 755 760 765
 Leu Ser Ser Glu Leu Glu Gly Arg Asp Tyr Pro Lys Glu Arg Glu Arg
 770 775 780
 Thr Gly
 785